

Appendix

```

        end
    end;
    return (false)
end
/* search_table */
Remove Procedure

procedure remove (var elem_to_del: list_element_pointer;
    previous_elem: list_element_pointer;
    index: 0 . . . table_size - 1);
/* Delete elem_to_del from list, advancing elem_to_del to next element. previous_elem points to
    elem_to_del's predecessor, or nil if elem_to_del is 1st element in list.*/
var p: list_element_pointer;
begin
    p := elem_to_del;
    elem_to_del := elem_to_del.next;
    if previous_elem = nil
    then table[index] := elem_to_del
    else previous_elem.next := elem_to_del;
    dispose (p)
end
/* remove*/

```

I claim:

1. An information storage and retrieval system, the system comprising:

a linked list to store and provide access to records stored in a memory of the system, at least some of the records automatically expiring,

a record search means utilizing a search key to access the linked list,

the record search means including a means for identifying and removing at least some of the expired ones of the records from the linked list when the linked list is accessed, and

means, utilizing the record search means, for accessing the linked list and, at the same time, removing at least some of the expired ones of the records in the linked list.

2. The information storage and retrieval system according to claim 1 further including means for dynamically determining maximum number for the record search means to remove in the accessed linked list of records.

3. A method for storing and retrieving information records using a linked list to store and provide access to the records, at least some of the records automatically expiring, the method comprising the steps of:

accessing the linked list of records,
identifying at least some of the automatically expired ones of the records, and

removing at least some of the automatically expired records from the linked list when the linked list is accessed.

4. The method according to claim 3 further including the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed.

5. An information storage and retrieval system, the system comprising:

a hashing means to provide access to records stored in a memory of the system and using an external chaining

technique to store the records with same hash address, at least some of the records automatically expiring,

a record search means utilizing a search key to access a linked list of records having the same hash address,

the record search means including means for identifying and removing at least some expired ones of the records from the linked list of records when the linked list is accessed, and

means, utilizing the record search means, for inserting, retrieving, and deleting records from the system and, at the same time, removing at least some expired ones of the records in the accessed linked list of records.

6. The information storage and retrieval system according to claim 5 further including means for dynamically determining maximum number for the record search means to remove in the accessed linked list of records.

7. A method for storing and retrieving information records using a hashing technique to provide access to the records and using an external chaining technique to store the records with same hash address, at least some of the records automatically expiring, the method comprising the steps of:

accessing a linked list of records having same hash address,

identifying at least some of the automatically expired ones of the records,

removing at least some of the automatically expired records from the linked list when the linked list is accessed, and

inserting, retrieving or deleting one of the records from the system following the step of removing.

8. The method according to claim 7 further including the step of dynamically determining maximum number of expired ones of the records to remove when the linked list is accessed.

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